PORT OF SEATTLE

MEMORANDUM

DATE: September 16, 1987

TO: Dave Aggerholm, Manager, Environmental Planning

FROM: Steve Sewell, General Counsel

SUBJECT: Soil Conditions at T-91

I spoke with Chuck Blumenfeld regarding the attached. There is a reporting requirement if the substances noted were present in a "reportable quantity." If these were reportable quantities, we should send the attached letter, as the release has to be reported by the owner or operator. If there is a "spill" (which would include ground-water contamination), it must be reported regardless of whether the tests show a reportable quantity.

If we get no response from Chempro, we should discuss this further. Please let me know if you have any questions.

Attachment

cc: Carol Sanders, Assistant Director, Marine Terminals

3428D/SAS/jkl

RECEIVED
AUG 5 1987

1616V DRAFT
8/5/87

Letter To Mike Keller, Vice President
Chemical Processors

Dear Mr. Keller:

On Juily 15, Doug Hotchkiss of the Port's environmental staff collected a soils sample in an excavation being made by your company for a sewer line modification on the Chempro lease area at Terminal 91. The sample was collected because of strong odors noted during the excavation. I understand you met Doug at the scene earlier that day and discussed the odors.

Analysis of the sample indicates the presence of high concentrations of organic solvents which are listed in WAC 173-303-9903 as "Acutely Dangerous Chemical Products." (see results attached).

, as operator of the facility,

I recommend you immediately inform the Washington Department of Ecology about this finding and take any other action you deem appropriate. Please provide information regarding action taken or refer any questions regarding this matter to ~~Dave Aggerholm, the Port's Environmental Manager. He can be reached~~ me at 728-3190.

Sincerely,

????????
Dave Aggerholm

attch

Steve — Chuck suggested informing DOE. But if DOE is informed they will likely require extensive sampling at the whole terminal because they've been interested in it for a long time. They are also likely to require us to inform them when any digging goes on at the terminal & to take other precautions. This would force what we've been trying to get Chempro to do but do we want to do it this way or now or .....?

I called Chempro & told them we have soil test results.

Sanders

RECEIVED
AUG 3 1987
MARINE TERMINALS DEPT
PORT OF SEATTLE

PORT OF SEATTLE

Memo

DATE 7/13/87

TO: Steve Sewell / Carol Sanders

FROM: [illegible]

EXT.

I suggest we discuss this ASAP vis-a-vis the CHEMPRO RCRA studies (as yet unscheduled) + our budgeted (but on-hold) underground oil studies & the recent "VAPORS" problem at City Ice. I feel there is a growing need to understand what's in the ground at T-91 + to decide what to do about it.

These findings are relatively serious + should be followed up -- in house + probably w/ CHEMPRO.

A-45 rev. 9/79

PORT OF SEATTLE

MEMORANDUM

DATE: July 31, 1987

TO: David Aggerholm, Manager Environmental Planning
Steve Sewell, Counsel

FROM: Doug Hotchkiss, Environmental Planner

SUBJECT: Terminal 91 Soils Analysis

Recent analysis of soils excavated by Chempro on its lease area at Terminal 91 indicate the presence of a considerable amount of organic solvents (Toluene, Ethylbenzene, and Xylene) about 3 to 5 feet below the paved surface.

A sewer line modification, on the Chempro lease area, required the excavation of a hole approximatly 7 feet deep and 4 feet in diameter at the surface, to gain access to a Metro sewer. I inspected the excavation to provide additional backround data on possible soils contamination of the Terminal 91 area. The soils did not show any visual indications of contamination by heavy petroleun products, but a strong odor indicated the presence of organic solvents associated with one level of soil. The soils were saturated with water and definitely not saturated with solvent at that point.

Samples were taken of the soil which emitted the strongest odor and these were analysed for volatile organics to provide additional background data on possible soils contamination of the Terminal 91 area.

The soils were presumably used to backfill the excavation upon completion of the job as the nature of the work displaced very little soil. Mike Keller of Chempro was on site one of the times I visited, and asked me if I saw any problem with backfilling of the hole. I said that I didn't see any problem with backfilling.

The analytical results from the samples have just been recieved and they indicate higher levels than originally perceived on site. These results show that the sample taken from the strongest smelling portion of the excavated pile were above the Hazardous Waste Level and therefore qualify for disposal at Chem Securities site in Arlington, Oregon.

Based on these results, if there are any excavations in the area in the future it would be appropriate to use specialized disposal techniques for some of the soils encountered. It would also be appropiate to inform tenants for their construction, and be aware for Port construction, to take precautions when exposing deep soils in the area. We should monitor the vapors in the excavations and insure worker protection in the way of ventalition fans etc. and minimization of the explosion hazard.

We should also request that Chempro check the air quality in the Metro manhole structure to insure that the pipe that was brought thru the side was adaquately seeled to prevent build up of toxic, explosive, organic solvent vapor levels in the manhole structure.

The type of material also indicates that it is a result of old past practices, not from a recent known source.

Attached is a copy of the analysis data.

1603V
DAH

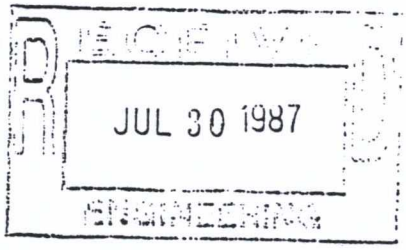
cc. Wells

ANALYTICAL RESOURCES INCORPORATED

Analytical Chemists & Consultants

333 Ninth Ave. North
Seattle. Wa 98109-5187
(206) 621-6490

28 July 1987



Doug Hotchkiss
Port of Seattle
P.O. Box 1209
Seattle, WA 98111

RE: Samples submitted for Volatile Organics Analysis as ARI Job. #00991.

Dear Doug,

Please find enclosed the data for the above referenced samples.

These samples were run on FINN I which met all Bromofluorobenzene Mass Tuning and Continuing Standard calibration requirements for EPA-CLP protocols on the date of analysis.

Note that the rerun for sample CPS-1 is reported in ppm (mg/Kg) due to the high dilution factor needed to bring the analytes into the calibrated range of the instrument. The purgeable aromatics reported here were 'clean peaks', which suggests that this is not contamination of the nature of a fuel or diesel oil, but some type of solvent contamination.

If you have any questions, please feel free to call me.

Respectfully submitted,

ANALYTICAL RESOURCES, INC.

Susan D Rosa

Susan D. Rosa
Project Manager

Enclosures

cc: File #00991
Mark Fugiel, AmTest

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ORGANICS ANALYSIS DATA SHEET - METHOD 624

Sample No: CPS-1

Lab Sample ID: 991-A
Sample Matrix: Sediments

QC Report No: 991-POS
Project No: NA
Date Received: 7/15/87

Data Release Authorized: Susan D Rasa

Date Prepared: 7/23/87
Date Analyzed: 7/23/87

Amount analyzed: .00295 gms dry weight
Conc/Dil: 1 to 2000

CAS Number		µg/Kg
74-87-3	Chloromethane	5400 U
74-83-9	Bromomethane	7100 U
75-01-4	Vinyl Chloride	6300 U
75-00-3	Chloroethane	7500 U
75-09-2	**Methylene Chloride**	**12000 B**
67-64-1	Acetone	20000 U
75-15-0	Carbon Disulfide	3400 U
75-35-4	1,1-Dichloroethene	7600 U
75-34-3	1,1-Dichloroethane	3400 U
156-60-5	Trans-1,2-Dichloroethene	4600 U
67-66-3	Chloroform	4200 U
107-06-2	1,2-Dichloroethane	3900 U
78-93-3	2-Butanone	11000 U
71-55-6	**1,1,1-Trichloroethane**	**430 M**
56-23-5	Carbon Tetrachloride	2900 U
108-05-4	Vinyl Acetate	10000 U
75-27-4	Bromodichloromethane	2200 U

CAS Number		µg/Kg
78-87-5	1,2-Dichloropropane	2700 U
10061-02-6	Trans-1,3-Dichloropropene	2900 U
79-01-6	Trichloroethene	2400 U
124-48-1	Dibromochloromethane	2700 U
79-00-5	1,1,2-Trichloroethane	2700 U
71-43-2	Benzene	2900 U
10061-01-5	cis-1,3-Dichloropropene	2900 U
110-75-8	2-Chloroethylvinylether	4400 U
75-25-2	Bromoform	3200 U
108-10-1	4-Methyl-2-Pentanone	6100 U
591-78-6	2-Hexanone	3200 U
127-18-4	Tetrachloroethene	2000 U
79-34-5	1,1,2,2-Tetrachloroethane	3600 U
108-88-3	**Toluene**	**1390000K**
108-90-7	Chlorobenzene	2200 U
100-41-4	**Ethylbenzene**	**3230000K**
100-42-5	Styrene	4600 U
	Total Xylenes	**7070000K**

***Volatile Organic Surrogate Recoveries**

d8-Toluene	128%
Bromofluorobenzene	118%
d4-1,2-Dichloroethane	88.4%

*Surrogate recoveries indicate the validity of a given analysis

Data Reporting Qualifiers

Value	If the result is a value greater than or equal to the detection limit, report the value.
U	Indicates compound was analyzed for but not detected at the given detection limit.
J	Indicates an estimated value when result is less than specified detection limit.
B	This flag is used when the analyte is found in the blank as well as a sample. Indicates possible/probable blank contamination.
K	This flag is used when quantitated value falls above the limit of the calibration curve and dilution should be run.
M	Indicates an estimated value of analyte found and confirmed by analyst but with low spectral match parameters.

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ORGANICS ANALYSIS DATA SHEET - METHOD 624

Sample No: CPS-1

Lab Sample ID: 991-AR
Sample Matrix: Sediments

QC Report No: 991-POS
Project No: NA
Date Received: 7/15/87

Data Release Authorized: Susan D Baer

Date Prepared: 7/23/87
Date Analyzed: 7/23/87

Amount analyzed: .000148 gms dry weight
Conc/Dil: 1 to 40000

CAS Number		mg/Kg
74-87-3	Chloromethane	110 U
74-83-9	Bromomethane	140 U
75-01-4	Vinyl Chloride	130 U
75-00-3	Chloroethane	150 U
75-09-2	**Methylene Chloride**	**300 B**
67-64-1	Acetone	390 U
75-15-0	Carbon Disulfide	68 U
75-35-4	1,1-Dichloroethene	150 U
75-34-3	1,1-Dichloroethane	68 U
156-60-5	Trans-1,2-Dichloroethene	91 U
67-66-3	Chloroform	84 U
107-06-2	1,2-Dichloroethane	78 U
78-93-3	2-Butanone	210 U
71-55-6	**1,1,1-Trichloroethane**	**9 M**
56-23-5	Carbon Tetrachloride	57 U
108-05-4	Vinyl Acetate	200 U
75-27-4	Bromodichloromethane	44 U

CAS Number		mg/Kg
78-87-5	1,2-Dichloropropane	54 U
10061-02-6	Trans-1,3-Dichloropropene	57 U
79-01-6	Trichloroethene	47 U
124-48-1	Dibromochloromethane	54 U
79-00-5	1,1,2-Trichloroethane	54 U
71-43-2	Benzene	57 U
10061-01-5	cis-1,3-Dichloropropene	57 U
110-75-8	2-Chloroethylvinylether	88 U
75-25-2	Bromoform	64 U
108-10-1	4-Methyl-2-Pentanone	120 U
591-78-6	2-Hexanone	64 U
127-18-4	Tetrachloroethene	41 U
79-34-5	1,1,2,2-Tetrachloroethane	71 U
108-88-3	**Toluene**	**1700**
108-90-7	Chlorobenzene	44 U
100-41-4	**Ethylbenzene**	**7800**
100-42-5	Styrene	91 U
	Total Xylenes	**22000**

2.2 %

***Volatile Organic Surrogate Recoveries**

d8-Toluene	104%
Bromofluorobenzene	103%
d4-1,2-Dichloroethane	90.4%

*Surrogate recoveries indicate the validity of a given analysis

Data Reporting Qualifiers

Value	If the result is a value greater than or equal to the detection limit, report the value.
U	Indicates compound was analyzed for but not detected at the given detection limit.
J	Indicates an estimated value when result is less than specified detection limit.
B	This flag is used when the analyte is found in the blank as well as a sample. Indicates possible/probable blank contamination.
K	This flag is used when quantitated value falls above the limit of the calibration curve and dilution should be run.
M	Indicates an estimated value of analyte found and confirmed by analyst but with low spectral match parameters.

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ORGANICS ANALYSIS DATA SHEET - METHOD 624

Sample No: CPS-2

Lab Sample ID: 991-B
Sample Matrix: Sediments

QC Report No: 991-POS
Project No: NA
Date Received: 7/15/87

Data Release Authorized: Laura D Ross

Date Prepared: 7/23/87
Date Analyzed: 7/23/87

Amount analyzed: .00265 gms dry weight
Conc/Dil: 1 to 2000

CAS Number		µg/Kg
74-87-3	Chloromethane	6000 U
74-83-9	Bromomethane	7900 U
75-01-4	Vinyl Chloride	7000 U
75-00-3	Chloroethane	8300 U
75-09-2	**Methylene Chloride**	**15000 B**
67-64-1	Acetone	22000 U
75-15-0	Carbon Disulfide	3800 U
75-35-4	1,1-Dichloroethene	8500 U
75-34-3	1,1-Dichloroethane	3800 U
156-60-5	Trans-1,2-Dichloroethene	5100 U
67-66-3	Chloroform	4700 U
107-06-2	1,2-Dichloroethane	4300 U
78-93-3	2-Butanone	12000 U
71-55-6	1,1,1-Trichloroethane	3000 U
56-23-5	Carbon Tetrachloride	3200 U
108-05-4	Vinyl Acetate	11000 U
75-27-4	Bromodichloromethane	2500 U

CAS Number		µg/Kg
78-87-5	1,2-Dichloropropane	3000 U
10061-02-6	Trans-1,3-Dichloropropene	3200 U
79-01-6	Trichloroethene	2600 U
124-48-1	Dibromochloromethane	3000 U
79-00-5	1,1,2-Trichloroethane	3000 U
71-43-2	Benzene	3200 U
10061-01-5	cis-1,3-Dichloropropene	3200 U
110-75-8	2-Chloroethylvinylether	4900 U
75-25-2	Bromoform	3600 U
108-10-1	4-Methyl-2-Pentanone	6800 U
591-78-6	2-Hexanone	3600 U
127-18-4	Tetrachloroethene	2300 U
79-34-5	1,1,2,2-Tetrachloroethane	4000 U
108-88-3	**Toluene**	**19000**
108-90-7	Chlorobenzene	2500 U
100-41-4	**Ethylbenzene**	**200000**
100-42-5	Styrene	5100 U
	Total Xylenes	**558000**

***Volatile Organic Surrogate Recoveries**

d8-Toluene	103%
Bromofluorobenzene	105%
d4-1,2-Dichloroethane	91.1%

*Surrogate recoveries indicate the validity of a given analysis

Data Reporting Qualifiers

Value	If the result is a value greater than or equal to the detection limit, report the value.
U	Indicates compound was analyzed for but not detected at the given detection limit.
J	Indicates an estimated value when result is less than specified detection limit.
B	This flag is used when the analyte is found in the blank as well as a sample. Indicates possible/probable blank contamination.
K	This flag is used when quantitated value falls above the limit of the calibration curve and dilution should be run.
M	Indicates an estimated value of analyte found and confirmed by analyst but with low spectral match parameters.

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ORGANICS ANALYSIS DATA SHEET - METHOD 624

Sample No: Method Blank

Lab Sample ID: 7/23 MB
Sample Matrix: Sediments

QC Report No: 991-POS
Project No: NA
Date Received: 7/15/87

Data Release Authorized: Susan D Rae

Date Prepared: 7/23/87
Date Analyzed: 7/23/87

Amount analyzed: 5mls
Conc/Dil: 1 to 1

CAS Number		µg/Kg
74-87-3	Chloromethane	3.2 U
74-83-9	Bromomethane	4.2 U
75-01-4	Vinyl Chloride	3.7 U
75-00-3	Chloroethane	4.4 U
75-09-2	**Methylene Chloride**	**1.3 J**
67-64-1	Acetone	11.6 U
75-15-0	Carbon Disulfide	2.0 U
75-35-4	1,1-Dichloroethene	4.5 U
75-34-3	1,1-Dichloroethane	2.0 U
156-60-5	Trans-1,2-Dichloroethene	2.7 U
67-66-3	Chloroform	2.5 U
107-06-2	1,2-Dichloroethane	2.3 U
78-93-3	2-Butanone	6.3 U
71-55-6	1,1,1-Trichloroethane	1.6 U
56-23-5	Carbon Tetrachloride	1.7 U
108-05-4	Vinyl Acetate	5.8 U
75-27-4	Bromodichloromethane	1.3 U

CAS Number		µg/Kg
78-87-5	1,2-Dichloropropane	1.6 U
10061-02-6	Trans-1,3-Dichloropropene	1.7 U
79-01-6	Trichloroethene	1.4 U
124-48-1	Dibromochloromethane	1.6 U
79-00-5	1,1,2-Trichloroethane	1.6 U
71-43-2	Benzene	1.7 U
10061-01-5	cis-1,3-Dichloropropene	1.7 U
110-75-8	2-Chloroethylvinylether	2.6 U
75-25-2	Bromoform	1.9 U
108-10-1	4-Methyl-2-Pentanone	3.6 U
591-78-6	2-Hexanone	1.9 U
127-18-4	Tetrachloroethene	1.2 U
79-34-5	1,1,2,2-Tetrachloroethane	2.1 U
108-88-3	Toluene	1.5 U
108-90-7	Chlorobenzene	1.3 U
100-41-4	Ethylbenzene	2.1 U
100-42-5	Styrene	2.7 U
	Total Xylenes	2.4 U

***Volatile Organic Surrogate Recoveries**

d8-Toluene	105%
Bromofluorobenzene	104%
d4-1,2-Dichloroethane	89.1%

*Surrogate recoveries indicate the validity of a given analysis

Data Reporting Qualifiers

Value	If the result is a value greater than or equal to the detection limit, report the value.
U	Indicates compound was analyzed for but not detected at the given detection limit.
J	Indicates an estimated value when result is less than specified detection limit.
B	This flag is used when the analyte is found in the blank as well as a sample. Indicates possible/probable blank contamination.
K	This flag is used when quantitated value falls above the limit of the calibration curve and dilution should be run.
M	Indicates an estimated value of analyte found and confirmed by analyst but with low spectral match parameters.

1834V

NOTES ON RQs & SOIL CONTAMINATION

Contamination of soils or water by sustances that are clearly not of natural origin is evidence that a "release" has occurred, regardless of the time, rate, or manner of the event.

Regulations vary as to the specifics, but releases must be reported.

A. Ethylbenzene = F003 component, otherwise unlisted (WDOE)
RQ: 1000

B. Toluene = U220, C, I, EHW, acutely dangerous, F005 component (WDOE)
RQ: 1000

C. Xylenes = U239, C, I, EHW, acutely dangerous, F003 component (WDOE)
RQ: 1000

D. 1,1,1,-Trichloroethane = U226, C, H, EHW, acutely dangerous, F001 & F002 component (WDOE)
RQ: 1*/(1000)

E. Methylene Chloride = U080, C, H, EHW, acutely dangerous, F001 & F002 component (WDOE)
RQ: 1*/(1000)

Compounds with a C designation have their concentrations divided by 1000 (multiply by 0.001) when calculating DW/EHW mixtures per WDOE regs.

For F001 & F002, though normally classed as DW, required to be EHW if concentration exceed 1%.

991-A: D+E = 12.4 ppm
(CPS-1) B+C+D+E = 8470 ppm
A = 3230 ppm

So using the waste mixture graph, 8470ppm/1000 = 0.00085%, which is close to the lower limit of 0.001% for designation as DW (assuming quantity of at least 100kg.) For RQ, the highest individual is C @ 0.7%. This means a bulk quantity of 72 tons would be needed to reach the RQ. For the total mix, 1.17%, a bulk of 43 tons would be needed to reach a combined RQ.

991-AR: D+E = 309 ppm
(CPS-1) B+C+D+E = 24000 ppm
A = 7800

So using the waste mixture graph, 24000ppm/1000 = 0.0024%, which is above the lower limit of 0.001% for designation as DW but below the limit of 0.01% for EHW (assuming quantity of at least 100kg.) D+E is also greater than the 100ppm limit for DW designation by Total HH. For RQ, the highest individual is C @ 2.2%. This means a bulk quantity of 23 tons would be needed to reach the RQ. For the total mix, 3.18%, a bulk of 16 tons would be needed to reach a combined RQ.

991-B D+E = 15 ppm
(CPS-2) B+C+D+E = 592 ppm
A = 200 ppm

So using the waste mixture graph, 592ppm/1000 = 0.00006%, which is well below the lower limit of 0.001% for designation as DW (assuming quantity of at least 100kg.) For RQ, the highest individual is C @ 0.06%. This means a bulk quantity of 834 tons would be needed to reach the RQ. For the total mix, 0.08%, a bulk of 625 tons would be needed to reach a combined RQ.

It doesn't appear that the excavation came up with a reportable quantity but that reflects the limited volume excavated.